DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Maximum depth (m): 4.5
Mean depth (m): 2.4
Volume (m³): Lake: ISLAND POND 63.94 Town: STODDARD County: Cheshire River Basin: Merrimack 1529500 Latitude: 43°04'00" N
Longitude: 72°04'56" W
Elevation (ft): 1281
Shore length (m): 6300
Watershed area (ha): 8852.1
% watershed ponded: 4.3 Relative depth: 0.5 Shore configuration: 2.22 Areal water load (m/yr): 844.0 Flushing rate (yr^{-1}) : 353.0

Lake type: natural w/dam

BIOLOGICAL:	10 February 1994	13 September 1993
DOM. PHYTOPLANKTON (% TOTAL) #1	DINOBRYON 35%	MICROCYSTIS 50%
#2	ASTERIONELLA 30%	MERISMOPEDIA 10%
#3	SYNURA 25%	
PHYTOPLANKTON ABUNDANCE (cells/mL)		405
CHLOROPHYLL-A (µg/L)		15.05
DOM. ZOOPLANKTON (% TOTAL) #1	KERATELLA 53%	NO ZOOPLANKTON
#2		COUNTS
#3		
ROTIFERS/LITER	44	
MICROCRUSTACEA/LITER	9	
ZOOPLANKTON ABUNDANCE (#/L)	53	
VASCULAR PLANT ABUNDANCE		Scat/Common
SECCHI DISK TRANSPARENCY (m)		3.8
BOTTOM DISSOLVED OXYGEN (mg/L)	10.0	8.5
BACTERIA (E. coli, #/100 ml) #1		< 1
#2		
#3		

SUMMER THERMAL STRATIFICATION:

not stratified

Depth of thermocline (m): None Hypolimnion volume (m^3) : None Anoxic volume (m³) : None

HEMICAL:			ISLAND PO	DND		
	10 February 1994		13 September		1993	
DEPTH (m)	1.0	3.0	1.0		3.0	
pH (units)	5.7	5.7	6.6		6.2	
A.N.C. (Alkalinity)	2.6	2.5	2.2		2.0	
NITRATE NITROGEN	0.08	0.08	< 0.02		< 0.02	
TOTAL KJELDAHL NITROGEN	0.30	0.36	0.28		0.24	
TOTAL PHOSPHORUS	0.007	0.008	0.010		0.009	
CONDUCTIVITY (µmhos/cm)	41.7	41.8	34.4		34.4	
APPARENT COLOR (cpu)	44	44	26		27	
MAGNESIUM			0.42			
CALCIUM			1.8			
SODIUM			3.5			
POTASSIUM			0.43			
CHLORIDE	5	. 5	5		5	
SULFATE	6	6	4		4	
TN : TP	54	55	28		27	
CALCITE SATURATION INDEX			4.1			

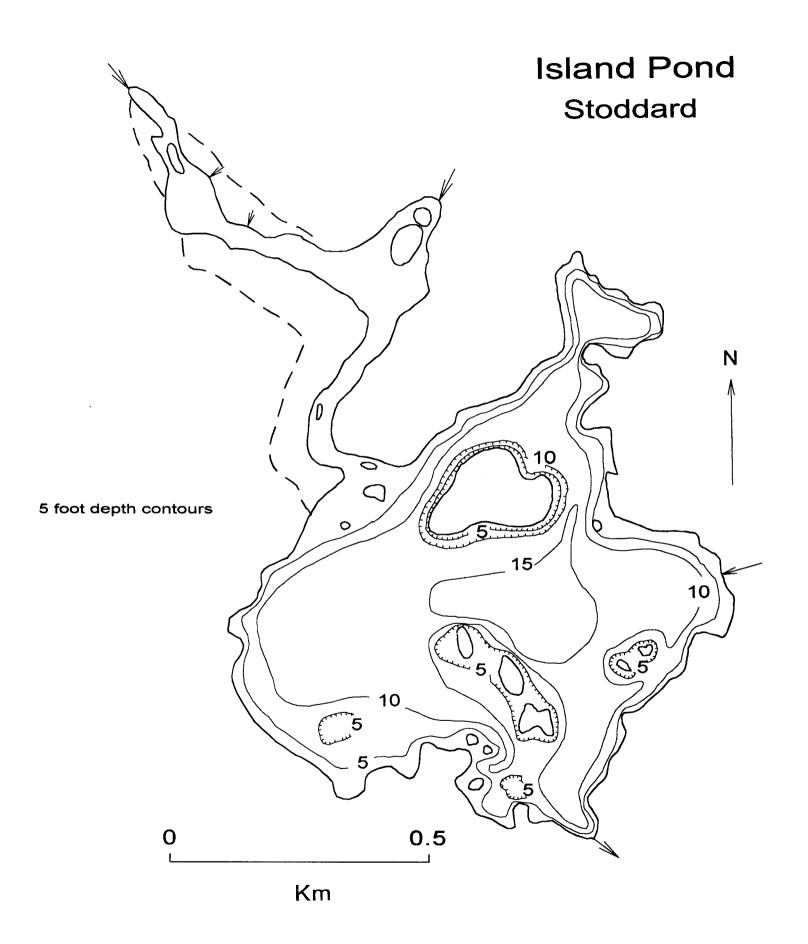
All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1993

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	2	2	3	7	Meso.

COMMENTS:

- 1. This pond was previously surveyed and classified in 1979. There was no change in trophic classification but some water quality differences were noted. The algae (chlorophyll) level was three times higher in 1993. A temperature stratification and bottom dissolved oxygen deficit was noted in 1979, but conditions were isothermal and iso-oxic (same top to bottom) in 1993. Plants were rated very abundant in 1979, but that rating included the wetland areas in the northern end that were not included in the 1993 evaluation.
- 2. The wholewater phytoplankton was dominated by the blue-greens <u>Merismopedia</u> (40%) and <u>Microcystis</u> (20%), along with <u>Cryptomonas</u> (15%).



FIELD DATA SHEET

LAKE: ISLAND POND

DATE: 09/13/93

TOWN: STODDARD

WEATHER: BREEZY, SUNNY & MILD

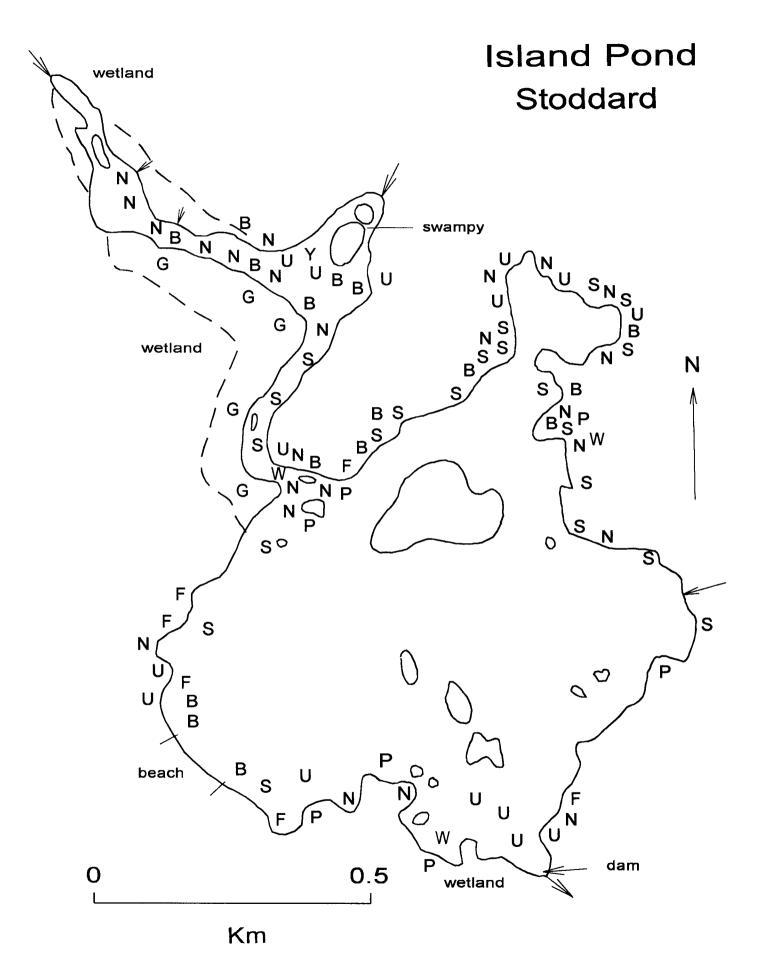
DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
0.1	20.0	9.0	99 %
1.0	19.8	8.8	93 %
2.0	19.2	8.6	92 %
3.0	19.1	8.6	92 %
4.0	19.0	8.5	91 %

SECCHI DISK (m): 3.8 COMMENTS:

BOTTOM DEPTH (m): 4.5

TIME: 1400

*Dissolved oxygen values are in mg/L



AQUATIC PLANT SURVEY

* * *				
LAK	E: ISLAND POND	TOWN: STODDARD	DATE: 09/13/9	
Key		ABUNDANCE		
	GENERIC	COMMON	MONDANCE	
В	Brasenia schreberi	Water shield	Scattered	
U	Utricularia	Bladderwort	Scattered	
W	Potamogeton	Pondweed	Sparse	
F	Nymphoides cordatum	Floating heart	Sparse	
S	Sparganium	Bur reed	Scattered	
N	Nymphaea	White water lily	Scattered	
P	Pontederia cordata	Pickerelweed	Sparse	
Y	Nuphar	Yellow water lily	Sparse	
G	Gramineae	Grass family	Sparse	
T	Typha	Cattail	Sparse	
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		77.5		

OVERALL ABUNDANCE: Scat/Common

GENERAL OBSERVATIONS:

1. Abundance ratings were for plants in the lake proper. Plants were very abundant in the northern areas. A large wetland area surrounds the narrow inlet channel.